

# Facilities Quarterly

ERNEST ORLANDO LAWRENCE BERKELEY NATIONAL LABORATORY ♦ FACILITIES DEPARTMENT NEWSLETTER

APRIL  
1999

## WORK PROGRESSES AT BERKELEY TOWER

Renovation of Berkeley Tower is proceeding at a fast pace, in preparation for arrival in May of the first of several Berkeley Lab tenants. Soon, Berkeley Lab will occupy the second through the seventh floors of the 38,000-sq-ft (3,500-sq-m) highrise.



Office walls go up at Berkeley Tower. (Photos by Roy Kaltschmidt)

Located at 2120 University in downtown Berkeley, at the corner of Shattuck and University, Berkeley Tower consolidates two offsite leased locations. It will also provide new offices for Procurement, which is moving out of Building 69, and the Administrative Services Department (ASD), which is moving from Building 65.

Leases at two existing offsite locations—Buildings 938 (The Promenade) and 936 (The Hinks Building)—are being terminated in favor of Berkeley Tower, which will become Building 937.

The first arrivals will be Human Resources, Work Force Diversity, and ISS, which will move from Building 938 in mid-May. The Controller, CFO, and Internal Audit offices, now in Building 936, will arrive a week later, to be followed by Procurement and ASD. When fully occupied, Berkeley Tower will have almost 200 personnel.

Work will include replacement of the heating, ventilation, and air conditioning (HVAC) system, installation of computer networking infrastructure (including a state-of-the-art rooftop microwave

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## ELECTRIC RANGERS TO JOIN LAB FLEET

Facilities Site Services will take delivery this year on at least 12 new Ford Ranger EV pickup trucks. The “Electric Ranger” represents a new generation of electric vehicles (EVs) that, in the right role, can equal or even exceed the performance of its gasoline-powered competition. The Facilities Department plans to use 12 Rangers; additional pickups will be procured if other departments and divisions want them.

Facilities Site Services group leader Bill Llewellyn is negotiating a lease agreement with the U.S. General Service Administration (GSA), which supplies and replaces the 260-plus vehicles maintained by the Facilities Department. GSA will purchase the trucks from Ford. DOE is helping fund the purchase, covering the considerable difference between the price of an EV and that of the gasoline-powered version.

The Ranger EV is one of a new breed touted by

manufacturers as the first mass-market electrics produced in modern times. These battery-powered compacts, minivans, and pickups now include entrants from most major manufacturers. Most are targeted at corporate and government fleets that must meet state and federal deadlines for changing over to zero-emission vehicles (ZEVs).

California law requires 10 percent of new cars sold in 2003 to be ZEVs—a total of about

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## ELECTRIC RANGERS

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100,000 vehicles. In the meantime, the California Air Resources Board (CARB) has reached agreement with the seven car manufacturers having the most sales in the state—General Motors, Ford, Chrysler, Toyota, Nissan, Honda and Mazda—that they market a few thousand electrics yearly. This accounts in part for the availability now of a variety of capable EVs.

For the Department of Energy and

Berkeley Lab, however, the driver is Federal Executive Order 13031, signed in 1996, which requires 75 percent of replacement “nonspecial-purpose” vehicles in federal fleets to use alternative fuels. Alternative-fuel vehicles include those that run on electric power, natural gas, or ethanol; and hybrids that can use either gasoline or an alternative fuel.

Facilities’ decision to go with electrics now is based on the improved performance of the current generation of EVs, as well as cost considerations.

“Electric makes sense for us because

it is a zero-emission vehicle, and the fueling stations are far less expensive to install than others such as natural gas and ethanol,” says Llewellyn. A natural gas fueling station, for example, could cost up to \$500,000. The 30-amp, 220-volt charging station for the Ranger is \$1,500. The cost of charging Ranger’s batteries is also low: around a dollar for about 70 miles of travel.

In a week of test driving at the end of February, conducted by the Electrical Shop, a Ranger loaned to the Lab by Ford earned generally positive responses from drivers, who commented on its good handling and power, even on the Lab’s steepest roads.

The Ranger EV is rated at 90 horsepower, with 140 ft-lb of torque. It’s top speed is limited by a governor to 75 mph. The high efficiency, 3-phase AC motor is mounted on the rear transaxle, and its battery assembly is mounted under the frame in 25 12-volt modules. The batteries can be fully charged in six to eight hours.

The Ranger’s estimated range is 100 miles, based on the Federal Urban Driving Schedule (FUDS), which is used to determine urban fuel economy ratings for conventional cars. Ford gives the pickup’s real-world range at between 65 and 85 miles per charge.

Until last October, the Ranger’s miles-per-charge was marginal at 50 miles. The difference is a new nickel-metal hydride (NiMH) battery set, which replaces the sealed lead-acid batteries used previously. This improvement was key in the decision to use the Electric Ranger at the Lab. “Here the question was hills,” says Llewellyn. “In general, we don’t put more than 30 miles per day on our trucks, but the hills could possibly reduce the range by 20 percent.” The NiMH batteries should leave the Ranger with energy to spare at the end

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### FROM THE FACILITIES MANAGER...

**Y**es, I drove the Electric Ranger. I went down the hill to Gayley and Hearst, and drove it all the way to Building 85. The ride was smooth, quiet, and without any problems on the hills. If the sedans operate as well, I think we have a solution to the requirement to operate alternative fueled vehicles.

Last issue I said we would be in Berkeley Tower by this time. Well, we’re not. Problems with the lease, which Bill Wu was able to work out, caused delays. We now plan to start the move in mid-May. At our other developing lease property, the Production Sequencing Facility in Walnut Creek, there have been some problems in meeting the changing requirements. Kirk Haley has learned more than he probably wanted to know about DOE and UC lease procedures, but has been able to meet JGI needs. Kirk and John Musante received OPAs for their work at the PSF.

OPAs also went to Maximo Steering Committee for its work in transferring JOBREPR to Maximo. The committee includes Ken Fletcher as chair, John Hutchings, George Ames, Mike Miller, Don Prestella, Elizabeth Reyes, Pankaj Bhide, Allison Mills, and Frank Yee. Dave Cooper, Miguel Medina, and Oscar Lopez received awards for their work as WOW program coaches.

The Department continues to grow as the Lab consolidates and reorganizes. We welcome Gavin Robillard, Patrice Atases, Tina Layton, Dwight Taylor, and Eleni Yatar of Property Management. Also joining Facilities is the Emergency Communications Group: Glenn Skipper, Bob Ngim, Mike Carreon, Eloy Salinas, and Rose Sun.

At the end of April we will host the Laboratory Facility Managers’ meeting. This is an opportunity for other labs to see our site and learn how we do things. We expect about fifteen other DOE sites to be represented.

**Bob Camper**

Work SMART...WORK SAFELY...If it is not safe, STOP the work.

## FACILITIES DEPARTMENT

Facilities provides Berkeley Lab with a full range of architectural and engineering, construction, and maintenance services for new facilities and for modification and support of existing facilities.

Architectural and engineering services include facility planning, programming, design, engineering, project management, and construction management. Maintenance and construction functions include custodial, gardening, and lighting services; operation, service, and repair or replacement of equipment and utility systems; and construction of modifications, alterations, and additions to buildings, equipment, facilities, and utilities. Additional services include

bus and fleet management, mail distribution, stores distribution, property management, and property disposal.

Ongoing Facilities activities include renewal and upgrade of site utility systems and building equipment; preparation of environmental planning studies; in-house energy management; space planning; and assurance of Laboratory compliance with appropriate facilities-related regulations and with University and DOE policies and procedures.

The Work Request Center expedites facility-related work requests, answers questions, and provides support for facility-related needs.

## FOCUS ON SERVICE: PROPERTY MANAGEMENT

Need to borrow an autoloader from Sun, loan a Cray supercomputer (acquisition cost, \$11 million) to NASA Ames, or transfer a \$64,000 lathe from Savannah River to the Lab? No problem. Facilities' newest group, Property Management, processes such transactions daily.

Property Management is responsible for ensuring that property transfers are carried out efficiently, with minimum risk to the Laboratory and maximum protection of government property. In addition, Property Management develops the policies and procedures for the identification, control, use, inventory and recording of all personal property at the Lab.

"Personal" property refers to all the equipment and supplies we use daily in our work. It is distinguished from real property such as buildings and infrastructure, and includes everything from personal computers, printers, and office furniture to research lasers, pens and pencils, and automobiles.

This adds up to more than 18,000 different types of property. If an item is worth more than \$5,000 or is considered "sensitive," it is tagged with a bar-coded property number, such as appears on every computer at the Lab. A property type is deemed "sensitive" if it tends to get misplaced, may be used for personal gain, or could be sold easily "on the street." Sensitive items include personal computers, laser printers, video players and video cameras.

Property Management joins Facilities as part of Bill Llewellyn's Site Services Group. Gavin Robillard is the Property Manager. Patrice Atases provides administrative support and field tagging of assets. Tina Layton and Dwight Taylor work with division coordinators in assignment of new assets, precious metal inventory, biennial walkthroughs, and review of subcontractors' property systems. Eleni Yatar creates new records in the property system and performs other support tasks. Please feel free to call Gavin with your property questions, suggestions, or comments at x4184.

## COMPLIMENTS

Regine Goth-Goldstein of EET thanks the Facilities personnel involved in her recent move: Richard Stanton, who oversaw the renovation; Fred Mecum, in charge of the construction; and Ron Woods, who arranged the actual move. "Everybody was very competent, extremely helpful, and made the chaotic experience of moving a whole lab as pleasant as possible."

Gloria Acosta of ASD has praise for Eula Williams' expert bus driving. "Without panic or distress to passengers, she avoided a collision with a driver who ran a stop sign at the intersection near the University/Milvia Lab bus stop."

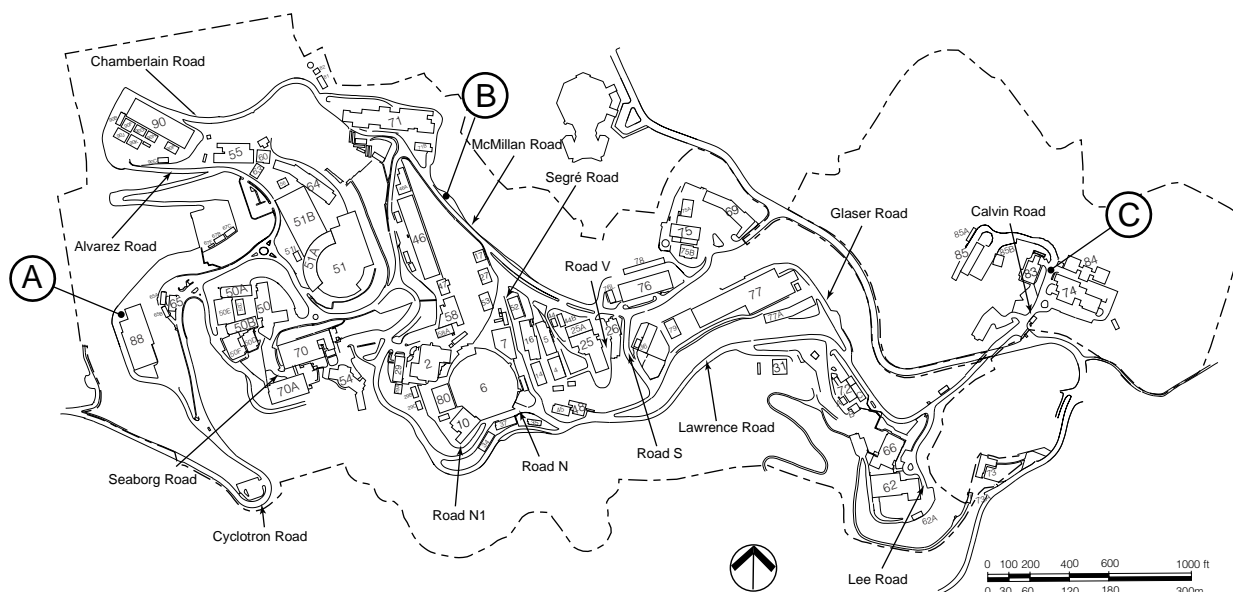
## WORK REQUEST CENTER

Telephone	6274
Fax	7805
E-Mail	WRC@lbl.gov
Mailstop	76-222

WRC welcomes questions or comments about Facilities Quarterly.

## CONSTRUCTION AND YOU

*Current construction projects affecting parking, or vehicular or pedestrian circulation*



**Project Contacts.** The name in parentheses after each project is the Project Manager (PM) or other person who is responsible for project oversight: coordinating all phases from design through construction; controlling cost, scope and schedule; and ensuring client satisfaction. This person will be happy to answer any questions about the project.

### Bldg 88: Seismic Anchoring of Shielding Blocks

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Some parking will be affected. Access to Building 88 will be blocked off at the northwest corner entrance. (Lonny Simonian, x6088)

### Blackberry Switching Station

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The contractor will continue to occupy the laydown area on McMillan Road until early 2000. (Chuck Taberski, x6076)

### Bldg 934 Relocations to Bldg 74

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Laboratory renovations on the third floor of Building 74 will continue through June. Parking spaces in front of Building 74 will be used by the contractor. (Richard Stanton, x6221)

### “CAUTION—CONSTRUCTION AREA”

Construction barricades and warnings are there for your protection. Under no circumstances should you cross a construction barricade, or disobey posted warnings or directions. Contact the Project Manager for escorted access to construction areas.

## ON THE DRAWING BOARD

*projects in study or conceptual design*

### **Bldg 74: Rehabilitation of Building Systems**

This project will upgrade Building 74 mechanical and electrical systems, provide seismic upgrade of the structure, and bring architectural features up to code. As part of the project, the Building 84 utility center will be expanded to accommodate Building 74 utilities, including relocated mechanical equipment and new electrical switchgear. This project is under consideration for FY2001 funding. (Richard Stanton, x6221)

### **Sitewide Water Distribution Upgrade, Phase 1**

Much of Berkeley Lab's fresh water supply system has been in place for over 30 years. This project will replace about 0.9 mile (1.5 km) of cast iron pipe and upgrade the remaining 5 miles (8 km) of pipe with corrosion protection, new valves and pressure reducing

stations, improvements to an existing water storage tank, and a new water storage tank in the East Canyon area. Facilities has prepared an updated conceptual design report for FY2001 funding consideration. (Charles Allen, x6438)

### **Bldg 62: Upgrade of Building Systems**

With 55,265 sq ft (5,135 sq m) of space, Building 62 is one of Berkeley Lab's largest multipurpose laboratory facilities. This project will expand wet chemistry capacity with new fume hoods, centralized exhaust, and an acid waste neutralization system. Other improvements will include modifications to the HVAC system, variable air volume (VAV) controls in the laboratories, an expanded low-conductivity water (LCW) system, electrical upgrades, and a new standby generator. The project will also make structural and architectural improvements. The conceptual design report for this project was prepared this year for FY2001 funding consideration. (Richard Stanton, x6221)

## IN PROGRESS

### **Blackberry Canyon Switching Station Replacement**

Preparations are underway to begin construction on the new Blackberry Canyon Switching Station, the fourth and final phase of the Lab's Electrical Systems Rehabilitation Project. Completion is expected in FY 2000. (Chuck Taberski, x6076)

### **Bldg 6: Laboratory and Office Buildout**

This project will build out approximately 12,000 sq ft (1,100 sq m) of laboratory, office, and research support space in the existing unfinished area on the second floor of Building 6. (Richard Stanton, x6221)

### **Bldg 51: Superconducting Magnet Facility**

Work will continue in rooms 8 and 30 of Building 51 in April and May. Installation of a new 15-ton crane is scheduled in April, with construction completion in late May. (Lonny Simonian, x6088)

### **Bldg 62: Third Floor Alterations and Moves**

Modifications to the third floor of Building 62 are under study to convert the space for use by Life Science Division researchers. (Richard Stanton, x6221)

### **Bldg 70A: Actinide Laboratory Upgrade**

Demolition of old mechanical equipment on the building roof, required for installation of a new high-efficiency particulate (HEPA) filtration system, will start in April. Installation of the HEPA system for room 1129 will take place in May and June. (Lonny Simonian, x6088)

### **Bldg 77: Rehabilitation of Building Structure & Systems**

Selection of the Architect/Engineer was completed in January. This project will arrest differential settlement of Building 77, replace building cross bracing, and realign bridge crane runways. Upgrades to the building HVAC system and addition of thermal insulation will improve temperature controls, supporting the building's precision-engineering mission. Other improvements will include new sound baffles and building architectural and electrical system upgrades. (Lonny Simonian, x6088).

### **Bldg 88: Seismic Anchoring of Shielding Blocks**

Installation of exterior steel buttresses on the north and west sides of the building will start in late April. Drag struts will be installed connecting the buttresses to steel members on top of the caves. (Lonny Simonian, x6088)

### **JGI Production Sequencing Facility**

Design work for the new electrical and mechanical systems in Bldg 400 will be completed this month. Construction of the tenant improvements for this fast-track project have already begun, and completion is expected in the August-September time frame. User outfitting with lab benches, equipment hookups, etc., is scheduled for completion in April 2000. Building 400 will contain more lab space and twice as many sequencers as Building 100, which is now in operation. The grand opening ceremony for Building 100 will take place on April 19, 1999, and will be attended by Secretary of Energy Bill Richardson. (Kirk Haley, x5973)

## ELECTRIC RANGERS

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of the work day.

NiMHs, which power many camcorders, laptops and cell phones, were developed by the United States Advanced Battery Consortium (USABC) under a cooperative agreement with DOE. The current battery of choice for EVs, NiMHs combine economic feasibility with an energy storage capacity far greater than lead-acid batteries.

A NiMH battery consists of a nickel oxide cathode, an electrolyte of potassium hydroxide (an alkaline liquid similar to Drano) and an anode consisting of a complicated metal alloy. During charging, the anode takes hydrogen into its structure and stores it. As the battery discharges, the hydrogen moves out of the metal hydride and into the nickel oxide electrode.

"EV batteries are now in their second generation," explains Elton Cairns, head of the Electrochemical Technologies Group in the Environmental Energy Technologies Division. "The goal is to store more and more energy per battery mass. Metal hydride is a factor of two better than lead acid: for equal battery weight NiMHs have about twice the range of the advanced lead acid battery. A typical energy-to-weight ratio for NiMHs is 65 to 75 watt-hours per kilogram, compared to 35 or 40 for a lead-acid battery."

The reduced weight of the Ranger's NiMH batteries—about 1,450 lb versus 2,000 for lead-acid—also increases the payload from 700 to 1250 lb. And, although nickel isn't totally benign, it is more environmentally friendly than lead.

The Electric Ranger can operate inside buildings and around building air intakes, and idling engines are not an issue. It is as easy to drive as any auto-



*The Ranger EV. (Photo by George Ames)*

matic, and quieter than any combustion engine.

According to Don Prestella of Facilities Material Services, it is likely that another demo vehicle will be brought to the Lab in the near future for anyone considering its use. Your present conventional pickup may be exchanged for a Ranger EV at the same base rate and mileage charge. For further information or to arrange a test drive, please contact Don Prestella at x4935 or Bill Llewellyn at x7726.

## BERKELEY TOWER

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antenna), and upgrade of the restrooms to meet Americans with Disabilities Act (ADA) requirements. Also, two elevators will be refurbished. Ceiling grids and light fixtures are being replaced with new ones that meet current seismic standards, and all office levels will have new carpets, new paint, new walls for enclosed offices and conference rooms, and new partitions for office cubicles.

The ground floor will have a reception area with staffing during normal business hours to control access and greet visitors. After-hours access will be by prox card. Use of the elevators will also require a prox card, and the elevator lobby will have surveillance cameras.

Small Projects Manager Bill Wu is working with the landlord to have the office areas ready for the offsite groups to move in by the time their current leases expire. Onsite Construction Superintendent Sam Birkey thinks most people will like their new digs. "It's

going to be very nice," he says. Berkeley Tower, which is just 16 years old, will provide the advantages of a modern office building, an efficient layout, attractive furnishings, and such amenities as a kitchenette on each floor. The location is closer to the main LBNL site than either of the two buildings it replaces and is a short walk from the Berkeley BART station. Parking for Berkeley Tower will be located at the Hinks Building and the Washington Mutual Building at the corner of Shattuck and Center.

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